



Proceedings

Revision 2.0

TOUGH Symposium 2003

Lawrence Berkeley National Laboratory
Berkeley, California
May 12–14, 2003

Search Articles by Topic

[Geothermal Reservoir Engineering](#)

[Fracture Flow and Vadose Zone Hydrology](#)

[Nuclear Waste Isolation](#)

[Mining Engineering](#)

[Reactive Transport](#)

[Environmental Remediation](#)

[Gas Transport](#)

[New Modules and Development](#)

[Pre- and Postprocessing](#)

[Search Articles by Author](#)

Geothermal Reservoir Engineering	
Björnsson, G., A. Hjartarson, G.S. Bodvarsson, B. Steingrimsson	<u>Development of a 3-D geothermal reservoir model for the greater Hengill volcano in SW-Iceland</u>
Ofwona, C.	<u>An update of the natural state numerical model of Olkaria geothermal system, Kenya</u>
Calore, C., A. Battistelli	<u>Application of TOUGH2/EWASG to the modelling of salt water injection into a depleted geothermal reservoir: preliminary results</u>
Osato, K., S. Ujo, S. White	<u>Prediction of formation equilibrium temperature while drilling based on drilling mud temperature: Inverse problem using TOUGH2 and wellbore thermal model</u>
Todesco, M., J. Rutqvist, G. Chiodini, K. Pruess, C. Oldenburg	<u>Modeling of recent volcanic episodes at Phleorean Fields (Italy): Geochemical variations and ground deformation</u>
Dobson, P., S. Salah, N. Spycher, E. Sonnenthal	<u>Simulation of water-rock interaction in the Yellowstone geothermal system using TOUGHREACT</u>
McKenna, J., D. D. Blackwell	<u>Numerical modeling of transient basin and range extensional geothermal systems</u>
Sato, T., K. Osato, T. Shiga, M. Sato, S. White, W. M. Kissling	<u>A study of reservoir estimation for a deep-seated geothermal reservoir using TOUGH2 and CHEMTOUGH2</u>
Kiryukhin, A., V. Yampolski	<u>Modeling study of the Pauzhetsky geothermal field, Kamchatka, Russia</u>
Ontoy, Y., P. Molling, N. Spycher, T. Xu, M. Parini, K. Pruess	<u>Scaling of hot brine injection wells: Supplementing field studies with reactive transport modeling</u>

Fracture Flow and Vadose Zone Hydrology	
Finsterle, S.	<u>iTOUGH2: From parameter estimation to model structure identification</u>
Podgorney, R., J. Fairley	<u>Evaluating conceptual models of flow in unsaturated, fractured porous media</u>
Liu, H.-H., G. Zhang, G. S. Bodvarsson	<u>The Active Fracture Model: Its relation to fractal flow patterns and further evaluation using field observations</u>
Lunati, I., W. Kinzelbach	<u>Gas tracer tests in an unsaturated fracture: Water soluble gases as partitioning tracers</u>
Bockgård, N., A. Niemi	<u>Role of soil-rock interaction on recharge into fractured rock</u>
Flint, A.	<u>The role of unsaturated flow in artificial recharge projects</u>
Kowalsky, M., S. Finsterle, Y. Rubin	<u>Estimating flow parameters using ground-penetrating radar and hydrological data during transient flow in the vadose zone</u>
Wang, W., S. P. Neuman, T. Yao, P. J. Wierenga	<u>Comparative simulations of a large-scale field infiltration experiment</u>
Unger, A., S. Finsterle, G. S. Bodvarsson	<u>Estimating large-scale fractured rock properties from radon data collected in a ventilated tunnel</u>

Nuclear Waste Isolation	
Bodvarsson, G. S., J. Birkholzer, S. Finsterle, H.-H. Liu, J. Rutqvist, Y.-S. Wu	<u>The use of TOUGH2/iTOUGH2 in support of the Yucca Mountain Project: Successes and limitations</u>
Senger, R., B. Lanyon, P. Marschall, S. Vomvoris, K. Ando	<u>TOUGH2/iTOUGH2 modeling in support of the gas migration test (GMT) at the Grimsel Test Site (Switzerland)</u>
Poppei, J., G. Mayer, J. Croisé	<u>Modelling of resaturation, gas migration and thermal effects in a SF/ILW repository in low-permeability over-consolidated clay-shale</u>
Javeri, V.	<u>Analysis of nuclide transport including non-linear adsorption depending on variable salinity in the heterogeneous geosphere of the Gorleben channel</u>
Wu, Y.-S., G. Lu, K. Zhang, G. S. Bodvarsson	<u>A mountain-scale model for characterizing unsaturated flow and transport in fractured tuffs of Yucca Mountain</u>
Birkholzer, J., S. Mukhopadhyay, Y. Tsang	<u>Modeling water seepage into heated waste emplacement drifts at Yucca Mountain</u>
Ahlers, C. F., T. Ghezzehei, S. Finsterle	<u>Development and testing of a method for efficient simulation of evaporation from a seepage face</u>
Ghezzehei, T., R. C. Trautz, S. Finsterle	<u>Evaluating the effectiveness of liquid diversion around an underground opening when evaporation is non-negligible</u>
Engelhardt, I.	<u>Inverse modeling of gas, water, and heat flow in bentonite/crushed rock backfill</u>
Moridis, G., Y. Seol, Y.-S. Wu	<u>Modeling studies of mountain-scale radionuclide transport in the unsaturated zone at Yucca Mountain, Nevada</u>
Singleton, M., E. Sonnenthal, M. Conrad, D. DePaolo	<u>Numerical modeling of stable isotope fractionation and multiphase reactive transport of water and water vapor using TOUGHREACT</u>

Mining Engineering	
White, S., A. Creighton, P. Bixley, W. Kissling	<u>Modelling the dewatering and depressurisation of the Lihir open pit gold mine</u>
Scheid, Y., S. Semprich, A. Chinkulkijniwat	<u>Computation of laboratory test results to estimate the loss of air in compressed air tunneling</u>
Rutqvist, J., C.-F. Tsang	<u>TOUGH-FLAC: a numerical simulator for analysis of coupled thermal-hydrologic-mechanical processes in fractured rock under multi-phase flow condition</u>

Reactive Transport	
Battistelli, A.	<u>Modeling the biodegradation of organic contaminants with TMVOCbio</u>
Kim, J., F. Schwartz, J. Shi, T. Xu	<u>Modeling the coupling between flow and transport developed by chemical reactions and density differences using TOUGHREACT</u>
Lorenz, S., W. Müller	<u>Modelling of halite formation in natural gas storage aquifers</u>
Sonnenthal, E., N. Spycher, T. Xu	<u>Linking reaction, transport, and hydrological parameters in unsaturated fractured rock: TOUGHREACT implementation and application</u>

Environmental Remediation	
Falta, R.	Simulation of subgridblock scale DNAPL pool dissolution using a dual domain approach
Kling, T., J. Korkealaakso	Nonisothermal multiphase modeling as an integration tool in the planning, control and optimization of in situ soil remediation in Söderkulla, southern Finland
Fagerlund, F., A. Niemi	Multi-constituent modelling of a gasoline spill using the T2VOC numerical simulator
Webb, S., J. M. Phelan	Implementation of land surface boundary conditions in TOUGH2
Lee, A.	3-D numerical modeling of freshwater lens on atoll islands
Zhou, Q., J. Birkholzer, I. Javandel, P. Jordan	Simulation of groundwater flow at the LBNL using TOUGH2

Gas Transport	
Pruess, K.	Numerical simulation of leakage from a geologic disposal reservoir for CO₂, with transitions between super- and sub-critical conditions
Doughty, C., K. Pruess	Modeling supercritical CO₂ injection in heterogeneous porous media
Oldenburg, C.	Carbon sequestration in natural gas reservoirs: Enhanced gas recovery and natural gas storage
Moridis, G., T. Collett	Strategies for gas production from hydrate accumulations under various geological and reservoir conditions
Battistelli, A., C. Oldenburg, G. Moridis, K. Pruess	Modeling gas reservoir processes with TMVOC V.2.0
García, J., K. Pruess	Flow instabilities during injection of CO₂ into saline aquifers
Oldenburg, C., A. Unger	Coupled subsurface-surface layer gas transport and dispersion for geologic carbon sequestration seepage simulation

New Modules and Developments	
Xu, T., E. Sonnenthal, N. Spycher, K. Pruess	TOUGHREACT: A new code of the TOUGH family for non-isothermal multiphase reactive geochemical transport in variably saturated geologic media
Pruess, K., A. Battistelli	TMVOC, a simulator for multiple volatile organic chemicals
Shan, C., K. Pruess	EOSN—A new TOUGH2 module for simulating transport of noble gases in the subsurface
Zhang, K., Y.-S. Wu, C. Ding, K. Pruess	TOUGH2_MP: A parallel version of TOUGH2
Kim, J., S. Finsterle	Application of automatic differentiation in TOUGH2

Pre- and Postprocessing	
Swenson, D., B. Hardeman, C. Presson, C. Thornton	Using PetraSim to create, execute, and post-process TOUGH2 models
Burnell, J., S. White, K. Osato, T. Sato	GeoCad—A pre- and postprocessor for TOUGH2
Sato, T., K. Osato, T. Shiga	G-Star-Base (G*Base)—A data base system for underground information and post-processing for TOUGH2
Pan, L.	WinGridder—An interactive grid generator for TOUGH2
Ito, K., Y. Seol	A 3-dimensional discrete fracture network generator to examine fracture-matrix interaction using TOUGH2